

ARCAP resulted in about a 3-4 fold increase in luciferase activity, relative to the control reporter containing the mutated ARE. This result indicated that ARCAP augments the transactivation activity of androgen receptor on the AFP promoter.

The above AFP reporter experiments were performed in the presence of testosterone.

- 5 To confirm that this effect was dependent on formation of the testosterone/androgen receptor complex, the wild type reporter was co-transfected with (1) mock DNA, (2) DNA encoding androgen receptor, (3) DNA encoding ARCAP, or (4) DNA encoding androgen receptor and DNA encoding ARCAP, in the presence or absence of testosterone. The results clearly indicated that the enhanced transactivation activity for androgen receptor due to ARCAP was
- 10 dependent on testosterone.

Other Embodiments

- It is to be understood that while the invention has been described in conjunction with the detailed description thereof, the foregoing description is intended to illustrate and not
- 15 limit the invention, which is defined by the scope of the appended claims. Other aspects, advantages, and modifications are within the scope of this invention.

What is claimed is:

1 1. A substantially pure polypeptide comprising an amino acid sequence at least 70%
2 identical to SEQ ID NO:2, wherein the polypeptide binds to an androgen receptor and
3 increases the ability of the androgen receptor to transactivate an androgen-responsive gene.

1 2. The polypeptide of claim 1, wherein the amino acid sequence is at least 80%
2 identical to SEQ ID NO:2.

1 3. The polypeptide of claim 1, wherein the amino acid sequence is at least 90%
2 identical to SEQ ID NO:2.

1 4. The polypeptide of claim 1, wherein the amino acid sequence is at least 95%
2 identical to SEQ ID NO:2.

1 5. A substantially pure polypeptide comprising the amino acid sequence of SEQ ID
2 NO:2.

1 6. A substantially pure polypeptide comprising the amino acid sequence of SEQ ID
2 NO:2, with up to 30 conservative amino acid substitutions, wherein the polypeptide binds to
3 an androgen receptor and increases the ability of the androgen receptor to transactivate an
4 androgen-responsive gene.

1 7. A substantially pure polypeptide encoded by a nucleic acid that hybridizes under
2 high stringency conditions to a probe the sequence of which consists of SEQ ID NO:1,
3 wherein the polypeptide binds to an androgen receptor and increases the ability of the
4 androgen receptor to transactivate an androgen-responsive gene.

1 8. An isolated nucleic acid encoding the polypeptide of claim 1.

1 9. An isolated nucleic acid encoding the polypeptide of claim 5.

1 10. An isolated nucleic acid encoding the polypeptide of claim 6.

1 11. An isolated nucleic acid comprising a strand that hybridizes under stringent
2 conditions to a single stranded probe, the sequence of which consists of SEQ ID NO:1 or the
3 complement of SEQ ID NO:1.

1 12. The isolated nucleic acid of claim 11, wherein the nucleic acid encodes a
2 polypeptide, wherein the polypeptide binds to an androgen receptor and increases the ability
3 of the androgen receptor to transactivate an androgen-responsive gene.

1 13. The nucleic acid of claim 12, wherein the amino acid sequence of the polypeptide
2 comprises SEQ ID NO:2.

1 14. The nucleic acid of claim 11, wherein the strand is at least 15 nucleotides in
2 length.

1 15. A vector comprising the nucleic acid of claim 8.

1 16. A vector comprising the nucleic acid of claim 9.

1 17. A vector comprising the nucleic acid of claim 10.

1 18. A vector comprising the nucleic acid of claim 11.

1 19. A vector comprising the nucleic acid of claim 12.

1 20. A cultured host cell comprising the nucleic acid of claim 8.

1 21. A cultured host cell comprising the nucleic acid of claim 9.

1 22. A cultured host cell comprising the nucleic acid of claim 10.

1 23. A cultured host cell comprising the nucleic acid of claim 11.

1 24. A cultured host cell comprising the nucleic acid of claim 12.

1 25. A method of producing a polypeptide, the method comprising culturing the
2 cultured host cell of claim 20 in a culture, expressing the polypeptide in the cultured host
3 cell, and isolating the polypeptide from the culture.

1 26. A method of screening for a compound that decreases androgen receptor-
2 mediated transactivation, the method comprising
3 contacting the polypeptide of claim 1 with a protein complex comprising an androgen
4 receptor, in the presence of a candidate compound;
5 measuring the extent of binding between the polypeptide and the protein complex;
6 and
7 determining whether the extent of binding is less than the extent of binding between
8 the polypeptide and the protein complex in the absence of the candidate compound, wherein
9 an extent of binding in the presence of the compound less than the extent of binding in the
10 absence of the compound indicates that the candidate compound decreases androgen
11 receptor-mediated transactivation.

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